



Evaluating Relative Effectiveness of Training School Programs to Probation on Recidivism of Japanese Juvenile Delinquents

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| year | 2007-05 |
| シリーズ | Department of Social Systems and Management Discussion Paper Series ~ no. 1178 |
| URL | http://hdl.handle.net/2241/100191 |

Department of Social Systems and Management
Discussion Paper Series

No.1178

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by

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May 2007

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JAPAN

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Abstract

In this article we study effectiveness of three training school programs, that is, the long-term, the general-short-term and the special short-term programs, relative to probation on recidivism for Japanese juvenile delinquents with differing criminal experiences. We employ logit/ individual lognormal split-population model to examine the relationship between the form of treatment and the time to as well as the probability of eventual reincarceration. We obtain and analyze the official crime data from the Ministry of Justice, Japan. We find that, in terms of the probability, those sent to training schools in the long-term and general short-term programs are less likely to be reincarcerated than delinquents placed on probation, but we do not find the same pattern in the special short-term program. However, none of the three programs are found to significantly affect the timing of reincarceration relative to probation. Implications of the result are discussed.

INTRODUCTION

Effective correctional treatment has been as important a goal of the Japanese juvenile criminal justice system as punishment since 1922 when the pre-war Japanese Juvenile Law was first enacted after Anglo-American law. More importance was placed on this goal in 1949 when the American juvenile criminal justice system replaced the pre-war Japanese Juvenile Law, with its emphasis on the welfare of juveniles (The Juvenile Law; Law No. 168 of 1948). Two major treatments in the new system, training school and probation, have routinely been updated to incorporate new ideas developed domestically and coming out of the West and have been serving as the foundation of correctional treatment of juveniles in Japan.

Probation in Japan relies heavily on counseling and family therapy, and is thus relatively similar to that in the West in terms of treatment techniques. However, the intensity with which these techniques have been applied is generally regarded as too low. This is mainly because there have never been enough resources: For instance, there were only 1,004 probation officers supervising 63,534 juvenile and adult offenders in Japan in 2004, though there were 49,389 assisting volunteers in the same year (Research and Training Institute, henceforth RTI, 2004). The caseload of a probation officer was thus approximately 63 and s/he was assisted by 49 volunteers on average in 2004.

There are locally developed treatment techniques in Japanese training schools. For example, since 1922, use of the Naikan Therapy or Introspection Method (Correction Bureau, 1998; Kurosawa and Takayanagi, 2002; Sato, 1968; Takeda, 1971) derived from the Buddhist principle that human beings can overcome their inherent imperfections and weaknesses through self-discipline learned from meditation, has been tested thoroughly and found effective. We doubt if such methods are popular in the West. At the same time, North American correctional treatment techniques such as Role Playing and Group Counseling have also been instituted in modified form in Japanese training schools

nationwide since 1949.

There were 53 training schools throughout Japan in 2004. They also offer vocational training and secondary education. Nationally there were 2,485 instructors in the training school system (Correction Bureau, 2005) and the daily average number of juveniles in the training schools was 4,586 in 2004 (Judicial System and Research Department, 2005), 1.85 delinquents per instructor. "The single and central administration governing" both adult and juvenile institutions is the main characteristic of the Japanese correctional system. Under this system, Correction Bureau has direct control over the correction administration concerning institutional treatments of offenders (Correction Bureau, 2003).

There are three treatment programs, each with its own curriculum: the special short-term program; the general short-term program; and the long-term program. The average confinement periods are three, five, and twelve months respectively. The long-term and general short-term programs have been in place since 1977, while the special short-term program was instituted as recently as in 1991.

Two short-term programs are designed for juveniles who are considered to be less crime-prone than those in the long-term program. Introspection method, role playing, and group therapy are offered in all three programs, while vocational training and secondary education are offered only in the long-term program. There are no significant differences between the two short-term programs in terms of the treatment techniques except that those enrolled in the special short-term program receive on-the-job training at the factory or store near the training school towards the end of their term. Because those who enroll in the special short-term program tend to have heightened awareness of their circumstances than those in the general short-term program, however, significant differences exist in the implementation of those techniques in the two short-term programs. For those in the special short-term program, these techniques are used primarily to turn their awareness into self-respect, and then into resolve to reestablish themselves in the larger society. To foster their self-respect, delinquents in the special

short-term program are treated in minimum security setting. For example, their dormitories do not have lockable doors. For those in the general short-term program, on the other hand, these techniques are used largely to indoctrinate to accept socially acceptable values and behaviors. The family court first decides which of the three training school programs the juvenile will undergo. Then each school makes its own individualized correctional plans considering juvenile's needs.

Braithwaite (1989) put forward a hypothesis that shaming including formal punishments can be reintegrative within the cultural context of respect for the offenders. As a piece of evidence, he offered the fact that the Japanese society emphasized reintegration of offenders more strongly than the West even in the criminal justice system. If he is right, incarcerated delinquents are less stigmatized in Japan than in the West at least in their first incarceration. This certainly creates an environment that makes it easier for the institutionalized to rehabilitate. Knowing this to be the case, however, the family courts may be more inclined to send juvenile delinquents to training school than the Western counterparts. As a result, there is no reason to expect that incarceration in training school in Japan works similarly as in the West. Given these and other cultural differences between the West and Japan, it is thus of great interest to find out if these two principal programs—training school and probation—have been performing as effectively as in the countries of their origin: North America and Europe.

The findings in the West on crime control convince us that it is prudent to entertain the possibility that treatment effect of interventions with delinquent youths is possibly a conditional phenomenon contingent upon the strength of ties to conventional society, the experience in criminal behavior, the content and the quality of implementation of the treatment programs, and individual differences in offending process (for example, Bernburg and Krohn, 2003; Dejong, 1997; Gottfredson and Barton, 1993; Gottfredson and Hirschi, 1990; Greenberg, 1981; Hirschi, 1969; Minor and Harry, 1982; Paternoster et al., 1983; Patterson and Yoerger, 1993, 2002; Patterson et al. 1989; Sampson and Laub,

1993).

As for ties to conventional society and experience in criminal behavior, Dejong (1997) studied how specific deterrence theory operated on the North American male arrestees and found that for those with few ties to conventional society and for first-time arrestees, a sentence of incarceration increased the probability of rearrest, but that for arrestees with few ties and for experienced offenders longer incarceration predicted longer time until rearrest. However for ties to conventional society, Sampson and Laub (1993, p.255) posited from informal social control and life-course perspective that incarceration had powerful negative effects on the prospects of future employment and job stability, which in turn increased the likelihood of their returning to criminal behavior.

On the content and the quality of implementation of the treatment programs, Gottfredson and Barton (1993) emphasized their importance than the setting, that is, institutional or community-based. They reviewed prior studies of the effectiveness of correctional programs and found that the results of the studies that compared the effectiveness of community-based treatments with that of institutional treatments were varied at least partly because the content and the quality of implementation of the treatment programs were not properly controlled in some of the studies.

As for individual differences in offending process, Patterson and Yoerger (1993, 2002) and Patterson et al. (1989) pointed out that there were different kinds of criminals depending on the timing of onset of delinquency: Early-starters had longer criminal careers and more problematic behavior than late-starters, although others (for example, Gottfredson and Hirschi, 1990; Sampson and Laub, 1993) had argued that there was a single process which applies to all offenders. Though there is no consensus on this issue, it is clear to us that we need to allow for the possibility of two types of offenders in this study.

The specific issues we investigate in this paper are therefore the following: First, is incarceration of juveniles in the Japanese training school, relative to participation in the

probation program, associated with longer times from release to reincarceration and lower probability of eventual reincarceration, even after the strength of ties to conventional society, the experience in criminal behavior, the content and the quality of implementation of the treatment programs, and the timing of onset of delinquency are controlled? Or is the nature of the relationship among incarceration, the probability and the timing of recidivism more complex? Second, are these results consistent with the findings from North America and Europe? If not, why?

DATA

SAMPLE

The Correction Bureau within the Ministry of Justice, Japan maintains a database of all the delinquents placed in the Juvenile Classification Homes (the JCH) since 1988 (the CB data). In the CB data we focus on one group, which we call the JCH class of 1991, of the delinquents who were in the JCH system for the first time in 1991 and were assessed by its clinical psychologists. There are 12,644 records of them, a sizable number for the data in our judgment.

We choose them partly because their complete correctional histories are available: The family court has the primary jurisdiction over the delinquents aged between fourteen and nineteen. Those who were fourteen in 1991 when they were placed in the JCH for the first time became twenty by the end of December 1997, the last month the CB data are available.

We choose them also because they are the most up-to-date data available: Psychological profiles and behavioral patterns of the juvenile delinquents leading them to crime are very different now from those of only a decade ago (Ako, 1998). We see the result of the change in Japanese National Police Agency statistics: The annual per-capita incidence of Penal Code offences excluding professional negligence in traffic accidents in Japan has climbed by 50% in the last decade (RTI, 2005). The increase came even

though the Japanese population on average had passed the youthful crime-prone years, a maturation that should be producing a drop in crime (RTI, 2002).

The CB data were independently entered into the database each time a juvenile delinquent was placed in the JCH, but her/his name and address were withheld to protect her/his privacy when the Bureau compiled them. Therefore we need to match her/his first record with the succeeding one(s) to see if s/he is a recidivist, with the information available in the CB data.

We implemented the record-matching as follows. First, we tried to match a juvenile delinquent's first record in the CB data with her/his succeeding ones using these five criteria—gender, birthday, a number of incarcerations in the JCH, the day released from the JCH before, and a previous disposition. Second, in the course of matching, we occasionally encountered situations where we had multiple candidates for the record we were trying to match. When this happened, we used the following four additional criteria—nationality, birth-order, the age at first delinquency, a previous delinquency. Next we counted the number of affirmative responses in the four questions above for each of the candidates. We regarded that the succeeding record was the one with the highest number of agreements. We did not treat the second four criteria in the same way as the first five criteria because they were thought to be less important and thus likely to be less reliable. See Yuma et al. (2006) for the record-matching criteria and algorithm in detail.

This record-matching was repeated six times and we identified up to five-time recidivists. After the record-matching, we had 8,384 delinquents (6,544 non-recidivists and 1,840 recidivists) from the CB data (the original IJCH1991 for short). Figure 1 shows this process.

We exclude psychotic disorders (111 individuals or 1.3%) from the original IJCH1991 because they could respond to the treatments differently from the others. We also exclude pre-delinquents (status offenders) (479 individuals or 5.7%) because the time origin for them is ambiguously defined. We also exclude fifteen delinquents whose

estimated time-at-risk are negative or zero. They all are training school graduates and we probably overestimated the length of the programs they underwent in training school.

In the original IJCH1991, there were 2,112 individuals (25.2%) who were neither placed in training schools nor on probation and 34 individuals (0.4%) who were placed in short-term training school program for traffic offenders. This program was terminated in mid-1991. Unfortunately, however, we are not able to form a no-intervention group out of these 2,146 individuals because most of their dispositions are either tentative (1,472 individuals, 68.5%) or dismissal (443 individuals, 20.6%). Their detailed compositions are in Appendix. We can conceptually form another intervention group—Child Education and Training Home or the Home for Dependent Children—but their numbers—63 individuals or 2.9% of the original IJCH1991—are limited and they are beyond the scope of criminal justice system. Therefore we exclude the 2,146 individuals and we focus on the effects of the three training school programs relative to that of probation in this study. Table 1 shows descriptive statistics for the final data after excluding these delinquents from the original IJCH1991 (henceforth, IJCH1991).

We analyze the data of reincarceration subsequent to the first placement in the JCH separately from those following the second because analyzing the combined data would violate the assumption of the model that data be statistically independent. In this paper, we concentrate on the data of reincarceration following the first placement in the JCH because these cases outnumber those subsequent to the second, third, and fourth placement in the JCH in our data overwhelmingly (78%).

Based on aforementioned Patterson and his colleagues' offender typology, we introduce a dummy-variable, indicating 1 for an early-starting-offender. If the covariate has a main effect as well as interactions with the other variables, this could imply their typology had some relevance for the data at hand.

Figure 1. The Process of Record-Matching in the JCH class of 1991



From Yuma et al. (2006)

Table 1 Descriptive Statistics for Sample

| Covariates | Total^a | Probation (=0) | Training School(=1) | |
|-------------------------------------------------|--------------------------|---------------------------|--------------------------------|----|
| | N=6,238 | N=5,132 | N=1,106 | |
| Socio-Demographic Background | | | | |
| Gender | | | | |
| Male(=1) ^b | 92.4 | 92.2 | 93.3 | |
| Female(=0) | 7.6 | 7.8 | 6.7 | |
| Age at Release | | | | |
| Average | 18.0 | 18.0 | 18.1 | ** |
| S.D. | 1.2 | 1.2 | 1.1 | |
| Strength of Ties to Conventional Society | | | | |
| Stable Home | | | | |
| Stable(=1) | 54.3 | 55.5 | 49.1 | ** |
| Unstable(=0) | 45.7 | 44.5 | 50.9 | |
| Attachment only to Father | | | | |
| Strong(=1) | 44.4 | 46.4 | 35.3 | ** |
| Weak or None(=0) | 55.6 | 53.6 | 64.7 | |
| Attachment only to Mother | | | | |
| Strong(=1) | 65.0 | 67.0 | 56.1 | ** |
| Weak or None(=0) | 35.0 | 33.0 | 43.9 | |
| Attachment to Both Parents | | | | |
| Strong(=1) | 37.0 | 39.2 | 26.9 | ** |
| Weak or None(=0) | 63.0 | 60.8 | 73.1 | |
| Employment Status | | | | |

| | | | | |
|---------------------------------------|------|------|------|----|
| Student(=1) | 9.5 | 8.9 | 12.4 | ** |
| Employed Full-Time(=1) | 51.4 | 54.0 | 39.2 | ** |
| Other(=0) | 39.1 | 37.1 | 48.5 | |
| Hardworking | | | | |
| Yes(=1) | 49.8 | 53.4 | 33.1 | ** |
| No(=0) | 50.2 | 46.6 | 66.9 | |
| Offending History | | | | |
| Previously Placed on Probation | | | | |
| Yes(=1) | 21.3 | 16.0 | 46.2 | ** |
| No(=0) | 78.7 | 84.0 | 53.8 | |
| Currently on Probation | | | | |
| Yes(=1) | 11.9 | 6.2 | 38.6 | ** |
| No(=0) | 88.1 | 93.8 | 61.4 | |
| Age at First Delinquency | | | | |
| Average | 14.5 | 14.9 | 14.5 | ** |
| S.D. | 1.9 | 1.9 | 1.9 | |
| Offender's Type | | | | |
| early-starter(=1) | 9.5 | 8.0 | 16.7 | ** |
| late-starter(=0) | 90.5 | 92.0 | 83.3 | |
| Current Delinquency Type | | | | |
| Property(Yes=1, No=0) | 34.9 | 35.7 | 31.5 | ** |
| Violence(Yes=1, No=0) | 24.1 | 23.7 | 26.0 | |
| Drug(Yes=1, No=0) | 13.1 | 12.9 | 14.0 | |
| Other | 27.9 | 27.7 | 28.5 | |
| Treatment | | | | |
| Training school program | | | | |
| long-term(Yes=1, No=0) | 7.3 | - | 41.0 | |

| | | | |
|---------------------------------|-------------|--------------|----------|
| general short-term(Yes=1, No=0) | 9.2 | - | 51.6 |
| special short-term(Yes=1, No=0) | 1.3 | - | 7.4 |
| Probation | 82.3 | 100.0 | - |

NOTE:a. We use the data of the first incarceration to the JCH.

b. () shows the covariate's code.

^{**}
 $p < .01$

As Dean et al. (1996) pointed out, a key variable implicated in Patterson's typological approach was the age at which criminal behavior begins, but his theory did not prescribe where the line should be drawn between early and late first delinquency. We define an early-starter as a delinquent whose age at first delinquency was twelve or younger and divide the sample into two: late-starting-offenders and early-starting-offenders.⁽¹⁾

DEPENDENT VARIABLE

We define recidivism to be reincarceration in the JCH. Other measures of failure such as rearrest could broaden the scope of study, but those data are not available in the IJCH1991. More importantly, however, we find it necessary to stick to the stringent definition of recidivism because re-arrests in our data could be arbitrary, even if they were available. Notice that, when constructing the IJCH1991, we excluded the pre-delinquents from our data for the same reason. Because we choose to use this definition, we cannot examine delinquency that were not reported to the police, or were not arrested, or were not placed in the JCH.⁽²⁾

Times-at-risk for reincarceration are defined as follows. For a juvenile on probation, the time origin is the date of her/his release from the JCH. If s/he was a recidivist, the failure time is the date of her/his reincarceration in the JCH and her/his time-at-risk is the time elapsed from the time origin to the failure time. Non-recidivist's

time-at-risk is the time elapsed from the time origin to her/his twentieth birthday at which point it is censored. For a juvenile sent to a training school, the time origin should be the date of her/his release from the school. Again the failure time for a recidivist is the date of her/his reincarceration in the JCH and a non-recidivist's time-at-risk is censored at her/his twentieth birthday.

COVARIATES

As the IJCH1991 data have 204 variables, we screen them based on the previous studies on recidivism, some of which are quoted in INTRODUCTION. Other than treatments, several covariates are included to control differences in the strength of ties to conventional society, the experience in criminal behavior, the content and the quality of implementation of the treatment programs, and the timing of onset of delinquency. The first column of Table 1 shows how we code these covariates.⁽³⁾

The age-at-release covariate is not only a socio-demographic variable, but also a control variable for the time of entry into the risk set because censoring of times-at-risk depends on the age at release. By including this covariate, we can make the censoring mechanism conditionally independent to some degree of the duration distribution (Vermunt, 1997, pp.121-122). We also include the covariate age-at-release-squared because crime rates in Japan, as well as in the West, increase sharply from age about ten to reach a peak at age fifteen to eighteen and decline sharply afterward.

As discussed in INTRODUCTION, there are significant differences in the content and the implementation of the three training school programs. We form three dummy-coded variables indicating which of the three—long-term/general short-term/special short term—programs a particular juvenile underwent as surrogates for the content/implementation of the treatment programs.

METHOD

We compare the effects of the three training school programs to that of probation in terms of both the probability and timing simultaneously, using split population models (Chung et al., 1991; Schmidt and Witte, 1988). In this method, we do not imply every individual would eventually recidivate. Rather, the population is conceptually divided into two groups, one of which would never recidivate. Explanatory variables may be assumed to affect either the probability of eventual recidivism and/or the distribution of time until recidivism for those who eventually return to JCH.

For this analysis, we employ split-population logit/individual lognormal model, which assumes that both the probability of eventual reincarceration and the time until reincarceration vary across juveniles with different covariates, following Chung et al. (1991), Dejong (1997) and Schmidt and Witte (1988). Henceforth we call the model logit/individual lognormal after them. Covariates are selected if its asymptotic t-value exceed unity either in the timing or in the probability. The choice of this conservative criterion enables us to leave in the model some of the control covariates that we deem essential. In Table 2 these control covariates are age at release, age at release squared, and a dummy indicating whether an individual is an early-starter.

RESULTS

Analysis begins with a critical examination of the split-population logit/individual lognormal model. First, we test an assumption of split population. With the assumed lognormal failure distributions applied to both the split-population model as well as the simple (non-split) model, the log-likelihood of -4665.81 for the former with the eventual recidivism rate of 0.80 is considerably higher than the log-likelihood of -4689.76 for the latter, the difference being significant at 1% level. This leads us to reject the hypothesis that eventually all juveniles will recidivate. Note that we use all the covariates appearing

Table 2 The Final Model of Logit/Individual Lognormal Model (N=6,238)

| Covariates | Timing | | | Logit | | |
|-------------------------------------------------|---------|----------|-------|----------|----------|-------|
| | coef | se(coef) | t | coef | se(coef) | t |
| (Intercept) | 8.02 | 8.55 | 0.94 | 40.97 | 35.91 | 1.14 |
| Socio-Demographic Background | | | | | | |
| Gender | 0.94 * | 0.47 | 1.99 | -4.74 ** | 0.83 | -5.69 |
| Age at Release | -0.29 | 0.99 | -0.29 | -5.22 | 4.13 | -1.26 |
| Age at Release squared | 0.01 | 0.03 | 0.26 | 0.16 | 0.12 | 1.35 |
| Strength of Ties to Conventional Society | | | | | | |
| Employment Status | 0.13 | 0.08 | 1.59 | 0.83 * | 0.36 | 2.30 |
| Attachment to Both Parents | 0.19 * | 0.08 | 2.40 | 0.15 | 0.37 | 0.40 |
| Offending History | | | | | | |
| Age at First Delinquency | 0.07 * | 0.03 | 2.05 | 0.20 | 0.13 | 1.55 |
| Offender's type | | | | | | |
| Early-Starter | 0.27 | 0.16 | 1.74 | -0.30 | 0.83 | -0.36 |
| Current Delinquency Type | | | | | | |
| Property | -0.12 | 0.10 | -1.23 | -1.42 ** | 0.53 | -2.69 |
| Drug | -0.27 * | 0.12 | -2.26 | -1.13 * | 0.46 | -2.47 |
| Treatment Programs (training school) | | | | | | |
| Long-Term Program | -0.32 | 0.23 | -1.40 | 2.17 ** | 0.66 | 3.29 |
| General Short-Term Program | 0.14 | 0.19 | 0.71 | 1.48 * | 0.66 | 2.26 |
| σ | 1.59 | | | | | |
| -2*loglikelihood | 9327.19 | | | | | |

Note. * $p < .05$, ** $p < .01$.

in Table 2 except for age at release squared for this comparison. This is because the non-split model failed to converge with age at release squared.

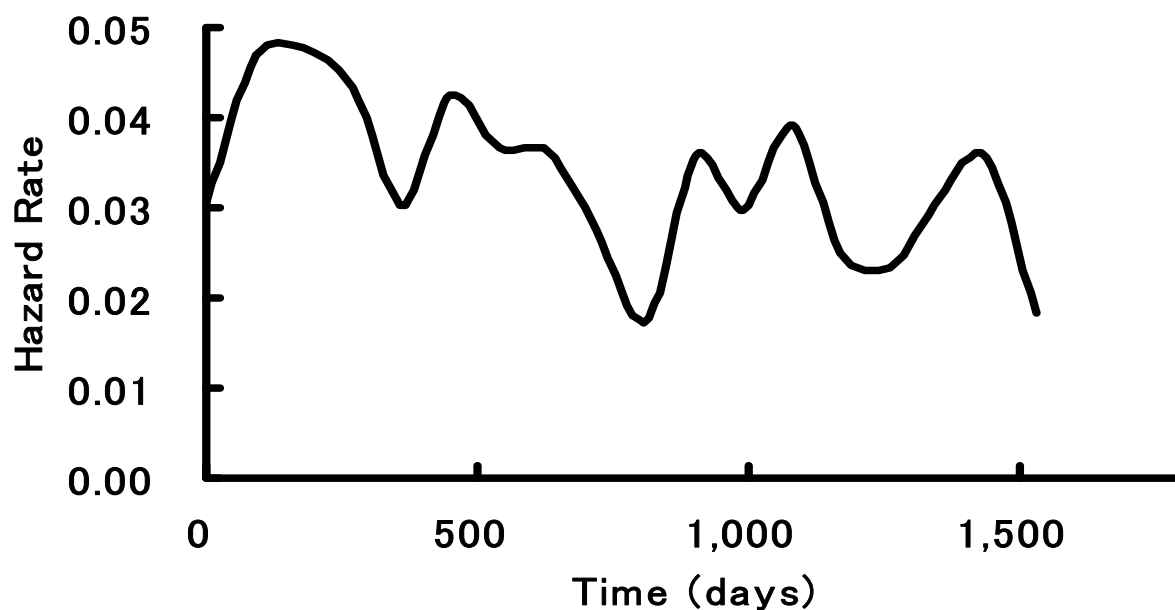
Our preliminary analysis is then proceeded to the examination of the two separate hypotheses that the timing or the probability to recidivate depends on the aforementioned covariates. As for the timing, we found with the (non-split) proportional hazard model, the effects of the long-term and general short-term programs are negative, indicating that those in these training school programs wait longer before recidivate than those on probation after controlling socio-demographic background (gender, age at release, age at release squared), strength of ties to conventional society (employment status, attachment to both parents, attachment to only father), offending history (age at the first delinquency), current delinquency types (property offence, drug-related-offence), and offenders typology (early-starting offender). We choose these control variables, after Yuma et al. (2006). It should be noted that the apparent effectiveness of the two training-school programs may be artifacts brought about by the non-split model assumption that every juvenile will eventually recidivate.

As for the probability of recidivism, we compare recidivism rates of the three training school program graduates with that of probationers, using a matched comparable control group design, matching variables being the aforementioned control variables. The recidivism rates of the long-term training school graduates and that of probationers are 22% (95 out of 433 individuals) and 26% (704 out of 2,680 individuals) respectively ($\chi^2(1)=3.66$, $p=0.056$). The recidivism rates of the general short-term training school graduates and that of probationers are 20% (112 out of 550 individuals) and 27% (938 out of 3,470 individuals) respectively ($\chi^2(1)=10.9$, $p<0.01$). This shows that individuals undergoing the long-term program are somewhat less likely to and those going through the general-short term program are clearly less likely to recidivate. On the other hand, neither the timing nor the probability for the special short-term training school graduates does not show statistically significant advantage over the probationers. These results

imply that the three training-school programs may have differing effect on the juveniles when we investigate the timing and the probability to recidivate simultaneously.

Finally, we test the assumption that the hazard function is lognormal. Figure 2 shows the actual hazard function of our data. The hazard rates are calculated based on 90-day interval, because, near the end of observation period, the rates fluctuate wildly due to the limited number of juveniles at risk. Figure 2 shows that the hazard rates peak slightly at the 180days after release, then decrease slowly with some fluctuations. These characteristics of the curve are consistent with those of lognormal distribution.

Figure 2. Actual Hazard



We also find that, using the covariates in Table 2 to appear the lognormal (-4630.60) is judged more suitable for the IJCH1991 in terms of log-likelihood than the Weibull (-4679.70). Since the exponential is the special form of Weibull, log-likelihood using the exponential would necessarily be smaller than that using the Weibull.

Now, we look at the results of the effects of covariates both on the timing and the probability to recidivate simultaneously in Table 2. It shows the final split population model.

⁽⁴⁾ Note that an individual with higher (positive) coefficient values on the variable is not only less likely to recidivate for the logit equation but also to recidivate later for the survival equation than someone with lower (negative) values.

The pivotal covariates—the treatment programs—in this analysis have two main effects in logit that show statistical significance, but they do not have any significant effects on the timing of recidivism. The result in logit suggests that delinquents sent to the long-term and general short-term training school programs are less likely to be reincarcerated than those placed on probation. The result that the long-term and general short-term programs are more effective than probation at the first incarceration is consistent with two studies, one by Dejong (1997) of adult male offenders in New York City using the same logit/individual lognormal models and the other by Gottfredson and Barton (1993) of juveniles in the state of Maryland, though their measurements of recidivism as well as the method to analyze them are different and their results apply to both first-time and repeat offenders. They found that during the one-year period following their release, and during the 2.5 years following their release, the previously institutionalized groups had fewer total arrests.

With regard to the timing of reincarceration, however, all the three training school programs have no significant coefficients. This means that eventual recidivist sent to training schools are just as quickly to be reincarcerated as those placed on probation, regardless of the training school programs.

With respect to gender covariate with male being unity, its coefficient for logit is

significantly negative, while that for the survival equation is significantly positive. This shows that the female delinquents are less likely to be reincarcerated than the male counterparts, but that the recidivating female delinquents are more likely to be reincarcerated sooner than the male counterparts. We can not find any empirical studies that examined the effect of gender on the timing and the probability of recidivism simultaneously, but this surprising result is in agreement with Ako (1982) who stated that Japanese female recidivating delinquents had more difficulties than male counterparts, although the Japanese female first-time delinquents are generally less likely to commit offences.

Significantly positive coefficient in the probability for the employment status is consistent with prediction from the social control theory (Hirschi, 1969) and with the studies by Dejong (1997) and by Visser and Linster (1990), though the two latter studies were on adults.

We find that attachment to both parents, but not to either one of parents, has a significant preventive effect on the timing of recidivism. This is consistent with Rankin and Kern (1994) in which they found that strong attachment to both parents prevented delinquency more effectively than strong attachment to one of the parents, although they used a logistic regression with longitudinal data, and did not use a split population model with survival data. It fails to confirm the claims of Hirschi (1969) that strong ties to both parents did not necessarily provide an effective buffer against delinquency.

The age-at-first-delinquency covariate has a positive effect on the timing of recidivism. This shows that, for recidivists, the older they are at their first delinquency, the later they are reincarcerated. This is consistent with many previous studies (for example, Blumstein et al, 1986; Nagin and Farrington, 1992a, 1992b; Patterson and Yoerger, 1993; Patterson et al., 1989), all of which found that an early entrance into delinquency was associated with more serious long-term delinquent behavior.

The effect of the property offense in logit is significantly negative. This result is

consistent with some Japanese studies (RTI, 1992; Yuma et al., 2006). In terms of the timing of recidivism, its effect is not significant, which is consistent with Dejong (1997) in the United States. These results show that property offenders are more likely to recidivate, and that recidivating property offenders are just as quickly to recidivate as recidivating non-property offenders.

The drug covariate is significantly negative on the probability as well as on the timing of recidivism. This shows that juvenile committing drug-related offences are more likely to be reincarcerated and that, for those who recidivate, drug-related offenders are more likely to be reincarcerated sooner than the other offenders.

The increasing effect of the drug-related offense covariate on reincarceration is consistent with Zamble and Quinsey (1997) in which they found that recidivists had more substance abuse history than non-recidivists. The result also agrees with another finding by RTI (1992) that the Japanese juvenile drug-related offenders had a higher rate of reincarceration than the other delinquents. For boot camp prisoners, however, MacKenzie et al. (1995) found that past experience of drug-related offense had a significantly preventive effect on rearrest.

We do not find any significant effects of offender's typology. We also tested a main effect of the offender's typology as well as interactions between them and social bond covariates or the treatment programs. However, these covariates do not show statistically significant effect either on the timing or the probability of recidivism. We have the same result, even if one covariate-age at first delinquency-is removed from the model in Table 2. We will discuss this in more detail in next section.

These coefficients describes patterns of juvenile recidivism in Japan generally in agreement with that in the West in terms of socio-demographic background, strength of ties to conventional society and experience in criminal behavior. In the area where they differ, our results may point to uniquely Japanese patterns, but they are consistent with at least one previous Japanese study of a similar nature.

CONCLUSION AND DISCUSSION

This study examines the effects of treatment programs in training school relative to probation on subsequent offending behavior with the Japanese data of the first incarceration to the Juvenile Classification Homes. The effects of treatment in the training school programs are mixed. We find that, in terms of the probability, those sent to training schools to undergo the long-term and general short-term programs are less likely to be reincarcerated than the delinquents placed on probation, but we do not find the same pattern for those undergoing the special short-term program. As for the timing of recidivism, however, we find that none of the three training school programs have significant effects relative to probation.

TREATMENT EFFECT ON RECIDIVISM

Let us first put forward two general reasons why sending juvenile delinquents to Japanese training schools to undergo the long-term and general short-term programs for treatment can be more effective relative to placing them on probation.

First the intensity with which training school programs are administered is much higher than that of probation. Immediately after a family court judge decides to send a juvenile to a training school, the treatment plan at a training school is formulated to help them learn to build and maintain interpersonal relationships and acquire job skills. Since the average caseload at training schools is one to two per instructor during the period under study and since they receive the demographic information on and psychological assessment of the incoming delinquent from the JCH as to the reason for his/her committing the crime, his/her behavior in group setting, the type of vocational training and social skills s/he is likely to need at her/his arrival at the school, the treatment plan can be made to suit each delinquent's stage of psychological development and mental and/or physical abilities. Training schools at least during the period under study have resources

to apply the plan to her/him evenly and consistently.

On the other hand, the intensity with which probation is administered is generally considered as too low. For example, the average caseload is approximately 92 per probation officer during the period under study⁽⁵⁾. The intensity of probation is ranked at the bottom in terms of “frequency of treatment contact” and “mean hours contact per week,” when coded according to the standard of Lipsey (1992).

Second, incarceration does not have as negative an effect on recidivism as presumed in the West probably because Japanese society is more reintegrative at least for the first-time offenders than the West is (Braithwaite, 1989; Yuma et al. 2006). Sampson and Laub (1993, p. 255) found, with the Gluecks’ data, that length of incarceration in adolescence and adulthood had negative effects on job stability, which in turn led to later crime and deviance. So our results are not consistent with their results. However, they also stated that individuals, if given the opportunity to reconnect to institutions like family, school, and work after a period of incarceration, the long incarceration may not necessarily result in later crime and deviance.

Braithwaite (1989) vividly described how guilt-induction and shaming were used to produce will to seek reunification to larger society in Japanese criminal justice system. He (1989, p.79) wrote that “Japanese police, prosecutors and courts rely heavily on guilt-induction and shaming as alternatives to punishment. If appeals to shame produce expressions of guilt, repentance and will to seek reunification and forgiveness from loved ones (and/or the victims), this is regarded as the best result by all actors in the drama of criminal justice.” We think that some of the first-time offenders are quite eager to play the role they are asked to play in this drama to preserve whatever they had before their first incarceration. This is perhaps one of the reasons why our result is in such a stark contrast to that of Sampson and Laub (1993).

Now we need to ask ourselves why sending juvenile offenders to Japanese training schools to undergo the special short-term program is not effective in preventing

recidivism. It may be because the special short-term program was not consistently implemented throughout Japan in the study period, because this program started in September, 1991, while our sample were placed in the JCH for the first time in the same year. Out of 21 special short-term training schools, 18 schools started this program on September 1, 1991, 1 on July 13, 1992, 1 on August 1, 1992, and the rest on September 1, 1992 (Komuro et al., 1994). This shows that not all the training schools in the special short-term program were ready to start this program at the same time. We think that some of them might implement this program less effectively than other training schools. We need to examine the effect of the special short-term program on recidivism with the data of more recent years.

Finally we found that there were a few juveniles who would not change their delinquent behavior despite the correctional interventions on their behalf. It is critically important to understand the root cause of such non-response in order to improve the application of the treatment technique or perhaps to change the type of the interventions and/or their implementations altogether. It would also be very valuable if we can identify such non-responding juveniles based on their demographic background as well as their criminal typology.

OFFENDER'S TYPOLOGY

Lack of significance of an early-starting dummy covariate on both the timing and the probability of recidivism in Table 2 indicates that there are no different offending processes between early-starting- and late-starting-offenders. Furthermore none of the interaction terms between early-starting dummy and social bond covariates or early-starting dummy and the type of treatment dummy does not show any significant effects on the timing as well as the probability of recidivism. These results are not consistent with Patterson's theory that the early-starting-offenders are less likely to alter criminal behaviors after their puberty, while the late-starting-offenders can reduce those

behaviors in their adolescence (Patterson and Yoerger, 1993, 2002; Patterson et al., 1989). We think that it is partly because this study focuses only on the first-time offenders and does not examine habitual recidivists. Dejong's (1997) study on male adult detainees in New York City reported that, for experienced offenders, longer periods of incarceration were more effective deterrents for people with few social ties--early-starting-offenders in her study--than shorter ones, but that it were not for those with many ties--late-starting-offenders.

It may be also because the criterion for offenders' typology, age at the first delinquency, is inappropriate. In addition to age at first delinquency, Patterson and Yoerger (2002) pointed out two variables as the most important variables separating early- from late-starting offenders; they are the level at which the disruptions occur for parenting and peer processes, and the levels of social incompetence. These are assumed to be significantly higher for the early- as compared to late-starting delinquents and significantly higher for late-starting delinquents as compared to non delinquents. Further research is needed to examine the valid criteria and the generalizability of this theory to Japanese offender's typology.

SPLIT POPULATION MODEL

Our findings in Table 2 suggest that an assumption that every juvenile will eventually recidivate is not valid in our data. In other words, it shows that there are some juveniles who will not recidivate after their release. As suggested in the literature such as Chung et al.(1991) and Schmidt and Witte (1988), evaluating the effectiveness of the treatment programs especially for the first-time juvenile offenders requires incorporation of split-population assumption in the model.

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Appendix

Dispositions by Family Courts besides Training school and Probation

Numbers and Percentages of the IJCH1991 in parentheses

(1) Placed in the Child Education and Training Home or the Home for Dependent Children (63, 2.9%);

Both of these institutions are provided for under the Child Welfare Law (Law No. 164 of 1947). The Child Education and Training Homes are established by the National or Prefectural Governments, or private persons to take care of children who are delinquents or are likely to become delinquents, while Homes for Dependent Children are private or prefectural institutions designed to care for dependent, abused or neglected children.

(2) Referral to the competent Prefectural Governor or Chief of the Child Guidance Center (13, 0.6%);

This action is taken when the judge thinks that a delinquent should be dealt with under the Child Welfare Law rather than be placed under the Juvenile Law.

(3) Referral to prosecutors (131, 6.1%);

The basis of this decision is the view that a juvenile should be subjected to normal criminal procedure due to the serious nature of the offence or the circumstances of the case, only when a juvenile is 14 years of age and over.

(4) Dismissal after or without Hearing (443, 20.6%):

Such a decision is reached when the Court finds it is unnecessary to make any particular disposition of a juvenile. Actually, though, often a considerable amount of casework is carried on prior to the final determination. If the Court finds it lacks jurisdiction, the same decision shall be entered.

(5) Tentative supervision by Family Court Probation Officers (1,177, 54.8%);

This is not a final disposition. If the judge feels that it is improper to take any of final dispositions immediately or that further and more thorough investigation must be necessary before a determination can be made, the juvenile may be placed under the supervision of the Family Court Probation Officer. During this period of supervision, the juvenile may continue to live with the person who is charged with his protection (his parents or guardians) under conditions imposed by the Family Court or he may be placed under the guidance of a suitable institution, agency or individual.

(6) Cancellation of admitting to the JCH (295, 13.7%):

This is not a final disposition. The judge makes this decision when the judge feels that it is improper for a juvenile to admit to the JCH by various reasons. For example, the juvenile is rearrested on a charge of another offenses or the judge feels that it is unnecessary to admit to the JCH on the way of Family Court Probation Officer's investigation.

(7) Others (27, 1.3%);

This category includes death, breach of the JCH and unknown.

In this section, we refer to "Crime and Criminal Policy in Japan from 1926 to 1988" by Shikita and Tsuchiya (1990) and "GUIDE TO THE FAMILY COURT OF JAPAN" by Supreme Court of Japan (1993) with respect to the terminologies and the definitions.

END NOTE

(1) We also examined age eleven and age thirteen thresholds for dividing the sample and obtained results very similar to those based on age twelve threshold.

(2) This means that our recidivism rates are lower than those defined in terms of rearrest, re-adjudicated in the family court, as well as that the results that we obtain may reflect not only the behavior of juveniles but also the decisions of the criminal justice system. We could avoid this problem by using self-report information, but it suffers from its own inaccuracies (see Schmidt and Witte, 1988, p.9). We need to recognize these biases when we interpret our results.

(3) We included the attachment-to-both-parents covariate after Rankin and Kern (1994) besides the attachment-to-only-father and attachment-to-only-mother covariates. We also examined several models with the attachment-to-either-parent covariate included, because Hirschi (1969) and others have argued that it was a better predictor of delinquency. We did not find the variable to be significantly correlated with recidivism in our data.

(4) We tested other models, which included interaction terms among the three treatment covariates—the long-term, general short-term and special-short-term programs—and types of current delinquency— property offences, drug-related offences, violent offences—and the others. However, we did not find any significant effects of them.

(5) The number of probation officers, who supervised offenders, increased from 684 in 1995 to 1,004 in 2004.

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ACKNOWLEDGEMENTS

We thank the Correction Bureau within the Ministry of Justice in Japan for providing us with the data. The views expressed in this paper, however, are ours and not of the Ministry. This research is supported in part by the Grant-in-Aid for Scientific Research (C)(2) 12680310 and (C)(2) 16510103 from the Japan Society for the Promotion of Science and by the grant from the Yasuda Life Welfare Foundation in 2001.